



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,051	01/31/2002	Li-Shiuan Peh	100110288-1	3926

7590 10/05/2005

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

PATEL, SHAMBHAVI K

ART UNIT	PAPER NUMBER
----------	--------------

2128

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/066,051

Applicant(s)

PEH ET AL.

Examiner

Shambhavi Patel

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/31/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-24 are pending.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 01/31/2002 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4-10, 13-14, 17, and 20-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Datta et al (US Patent No. 6,209,033), herein referred to as Datta.
5. As per claim 1, Datta is directed to a computer implemented method including requirements for a plurality of flows among a set of network nodes (column 3 lines 1-

10), the method comprising selecting, from among the set of network nodes, a source node and destination node (column 2 lines 25-29), determining a maximum capacity available at the selected source node and the selected terminal node, and generating the flow having a capacity less than or equal to the lower of the maximum capacity of the source node and the terminal node (column 3 lines 1-10, 24-35, column 6 lines 33-61).

6. As per claims 4 and 5, Datta is directed to the method according to claim 1, further comprising repeating said selecting, said determining, and said generation until a stop condition is repeated (column 3 lines 1-10). Datta tests all the links present in the network, so the stop condition is reached when all existent connections between the source nodes and destination nodes are evaluated.

7. As per claim 6, Datta is directed to the method according to claim 5, wherein said set of network nodes comprises a cluster of nodes and wherein the design problem includes a plurality of clusters (column 2 lines 12-16).

8. As per claim 7, Datta is directed to the method according to claim 6, wherein the design problem includes at least one flow between a pair of clusters (column 2 lines 12-16; Figure 8).

9. As per claim 8, Datta is directed to the method according to claim 7, wherein the design problem further comprises at least one node not in the clusters having a flow to a node in the clusters (column 2 lines 12-16; Figure 8).

10. As per claims 9 and 10, Datta is directed to the method according to claim 1, further comprising generating an additional flow and determining whether to add the flow to the design problem according to a specified probability (column 6 lines 33-61). New links are added to the network, and the network is then simulated to see if the changes are preferable. If there is a high probability that the changes will negatively affect the network, or if this causes the bandwidth to exceed its maximum, the changes can be discarded.

11. As per claim 13, Datta is directed to a system for generating interconnections for communication between a set of nodes, comprising:

- A set of design information including user-specified parameters for the design problem (column 7 lines 34-38)
- A fabric design problem generation tool that generates a design for the interconnect fabric including a set of flow requirements among the set of nodes in response to the design information (column 3 lines 1-10).

12. As per claim 14, Datta is directed to the system according to claim 13, wherein said fabric design generation tool selects, from among the set of network nodes, a

Art Unit: 2128

source node and destination node (column 2 lines 25-29), determining a maximum capacity available at the selected source node and the selected terminal node, and generating the flow having a capacity less than or equal to the lower of the maximum capacity of the source node and the terminal node (column 3 lines 1-10, 24-35, column 6 lines 33-61).

13. As per claim 17, Datta is directed to the system according to claim 14, wherein said fabric design problem generation tool adds flows to the set of flow requirements until a stop condition is reached (column 3 lines 1-10). Datta tests all the links present in the network and adds new ones as needed, so the stop condition is reached when all existent connections between the source nodes and destination nodes are evaluated.

14. As per claim 20, Datta is directed to the system according to claim 13, wherein said set of network nodes comprises a cluster of nodes and wherein the design problem includes a plurality of clusters (column 2 lines 12-16).

15. As per claim 21, Datta is directed to the method according to claim 20, wherein the design problem includes at least one flow between a pair of clusters (column 2 lines 12-16; Figure 8).

16. As per claim 22, Datta is directed to the method according to claim 21, wherein the design problem further comprises at least one node not in the clusters having a flow to a node in the clusters (column 2 lines 12-16; Figure 8).

17. As per claims 23 and 24, Datta is directed to the system according to claim 17, further comprising generating an additional flow and determining whether to add the flow to the design problem according to a specified probability (column 6 lines 33-61). New links are added to the network, and the network is then simulated to see if the changes are preferable. If there is a high probability that the changes will negatively affect the network, or if this causes the bandwidth to exceed its maximum, the changes can be discarded.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

20. Claims 2-3, 15-16, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Datta (US Patent No. 6,209,033) in view of Dziong et al (A Framework for Bandwidth Management in ATM Networks—Aggregate Equivalent Bandwidth Estimation Approach), herein referred to as Dziong.

21. As per claims 2 and 3, Datta fails to teach the step of determining the capacity available at each port by taking into consideration port saturation and unused port capacity.

22. Dziong discloses evaluating each port when calculating the capacity of a node. The evaluation takes into account congestion among the ports, as well as the traffic entering and leaving the port (Dziong page 1997 section I lines 6-19).

23. At the time of the invention it would have been obvious to one skilled in the art to combine the teachings of Datta and Dziong.

24. The motivation for doing so would be to ensure the correct calculation of the node's capacity. If every port within the node is not evaluated for its capacity, the maximum capacity for the node may be incorrectly calculated.

25. As per claims 15 and 16, Datta fails to teach determining the capacity available at each port by taking into consideration port saturation and unused port capacity.

26. Dziong discloses evaluating each port when calculating the capacity of a node. The evaluation takes into account congestion among the ports, as well as the traffic entering and leaving the port (Dziong page 1997 section I lines 6-19).

27. At the time of the invention it would have been obvious to one skilled in the art to combine the teachings of Datta and Dziong.

28. The motivation for doing so would be to ensure the correct calculation of the node's capacity. If every port within the node is not evaluated for its capacity, the maximum capacity for the node may be incorrectly calculated.

29. As per claim 18, the combination of Datta and Dziong as applied above to claim 16 teaches the system wherein the stop condition is reached when each node in the set has at least a specified number of flows (column 3 lines 11-23).

30. As per claim 19, the combination of Datta and Dziong as applied above to claim 16 teaches the system wherein the stop condition is based on bandwidth levels of the flow requirements (column 3 lines 11-23).

31. Claims 11 and 12 are rejected under 35 U.S.C 103(a) as being unpatentable over Datta (US Patent No. 6,209,033) in view of Nemirovsky (US Patent No. 5,426,674).

32. Datta fails to teach assigning the flow to one or a plurality of ports. Nemirovsky teaches adding flows to ports in a plurality of source nodes (Nemirovsky column 5, lines 24-35). It is known in the art that a terminal is a computing device with one or a plurality of storage devices. Thus, the terminal disclosed by Nemirovsky is analogous to a port.

33. At the time of the invention it would have been obvious to one skilled in the art to combine the teachings of Datta and Nemirovsky.

34. The motivation for doing so would be to eliminate or reduce bottlenecks within the system. By splitting the flow between multiple ports, each port has less traffic to handle, and thus there will be fewer bottlenecks.

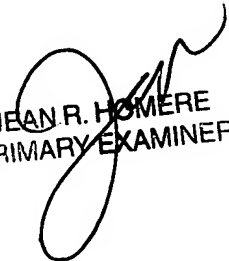
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shambhavi Patel whose telephone number is 571 272 5877. The examiner can normally be reached on 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean Homere can be reached on (571)272-3780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2128

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


JEAN R. HOMERE
PRIMARY EXAMINER